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**Company: Asaco General Trade & Contracting**  
**Register no.:73784 Beirut**  
**Established: Sep.1998**  
**Managing Director: Ramzi Abou Said**

**Department: Renewable Energy**  
**No. of Employees: 28**

**Continuous Development, Customer Satisfaction & Environmental Conservation is our Commitment**, this is ASACO General Trade & Contracting policy an ISO certified company deep-rooted in the Renewable Energy Field.

ASACO is by far the largest local integrator with the longest experience for the design, supply & installation of Renewable Energy systems since 1998 exceeding 4MW supplied or installed locally, Asaco has developed a manufacturing department specialized in mounting racks for photovoltaic solar panels capable to tailor the special requirements per each design whether it was installed on roof top, building façades or ground.

Asaco is a local technical official partner & an authorized dealer for famous brands in this renewable energy filed, namely:

1.  Studer Innotech: Switzerland ,
  2.  SMA: Germany
  3.  Fronius: Austria
  4.  Schneider/ Xantrex: EU/USA
  5.  SUNLIGHT Sunlight: Greece
  6.  BAE BAE Batteries: Germany.
-  Suntech: China

Here enclosed are some projects designed & installed by Asaco for reference.

### Projects in Hand:

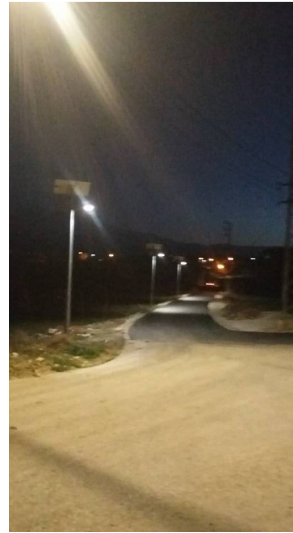
- Design, Supply and installation of 200kW solar water pump in Amiq Bekaa (Extension project)



- Design, Supply and installation of 4 systems of 70kW solar water pump in Mansoura Bekaa.
- Design, Supply & Installation for 211 kWp BIPV System at MTV (Local TV Media Station).
- Supply and Installation of 1.3 MWp Solar Water Pumping System in Baalbeck through the Council for Development and Reconstruction, World Bank - Joint Venture ASACO PAC



- Supply and Installation of 800 Street Lighting Poles in the three Unions of Al Sahel, Jabal Al Cheikh and Istiklal, through the Council for Development and Reconstruction, World Bank



- Supply & Installation of 1 MW Solar Station in Choukeen, Ministry of Energy and Water - Joint Venture ASACO PAC FARHAT



- Supply & Installation of Solar pumps in Addousieh (108 kW), Client: Mr. Salman Ghaith. under NEEREA 60HP, 800m<sup>3</sup>/day



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### ***Executed Projects:***

- Supply & Installation of 700 kW Solar System at Taghzia Factory Dibieh, South Lebanon through DREG program, UNDP
- Provision of Civil Works to install a 90 kWp photovoltaic (PV) pumping station in Maachouk Gathering Tyre' well to cover a major part of the water demand, UNDP 2017





- Supply & Installation of 4 MW Solar Stations in Sierra Leone, UNOPS. This project was the largest executed in Sierra Leone & was closely covered by press where more than 50 Engineers were trained by Asaco in Collaboration with the Government of Sierra Leone 2017



## Awoko News Paper & Sierra Leone News Published: “Solar energy project conducts training

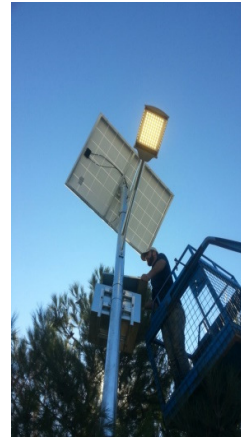
United Nations Office for Project Services (UNOPS) in Sierra Leone is hosting series of training for selected installation companies, in solar business. In collaboration with Government the training will run from the 18th to 21st April, to be followed by 14 days of on the job sessions in two communities, in Port Loko District. Held at Golden Tulip Hotel, Aberdeen, engineers from Barefoot Women Solar Engineers Association, Frontier Business Solutions and APITECH Africa Limited will be trained by three facilitators from ASACO Solar Company, the supplier of the solar equipment and tools, participants will use in the various beneficiary communities.

The objective of the training is to maximize accurate connection and functionality of the various parts, to enhance the timely and proper completion of the system. In line with the project objective this training will ensure the solar equipment are installed correctly and products warranty requirements are not violated.

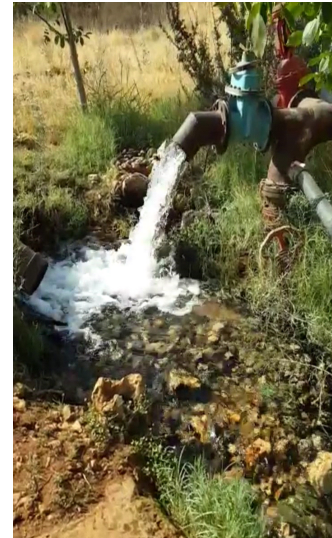
Lead facilitator and Managing Director of ASACO a company with 25 years of experience in solar trade and contracting, Ramzi Abu Said, said, “Project safety and guidance is important in the training, using the installation checklist”.

- Design, Supply & Installation of 320 Solar powered-Street Lighting System in Akkar, UNDP. 2016





- Design, Supply & Installation of 4 Solar pumps in Amiq/Bekaa, (220 kW), Client: Mr. Hadi Wahib Ghaith Contract no. PI\_1411191401 under NEEREA. 2016



- Design & Supply of SMA Inverters & Solar Mounting Accessories for 600KW PV Project in Sukhna\_Egypt 2016
- Design, Supply & Installation of 24.8 kWp off-Grid Solar System Mar Chrabel School, Jieh-Lebanon 2016

- Design, Supply, Install, Test, Commission & Maintenance of Overall System Contract Title: 45 kW Water Pump Station with Renewable Energy, Municipality of Baakleen – Lebanon, funded by the European Union 2016.



- Solar System: 7.5 kWp On-Grid, 24 kW 3xphase Off Grid Backup, 90kWh Storage at Skaff Residence /Atchani under NEEREA 2016
- Supply and Installation of 120 kW Photovoltaic Hybrid Power Plant at Emkan – Souk Akkar in Akkar, North Lebanon. UNDP. 2016





- Supply & Installation of 130 kW photovoltaic Hybrid Power Plant at Agricultural Center of the North (CAN) of Rene Mouad Foundation (RMF), Mejdlaya, North Lebanon, UINDP, 2016
- Supply and Installation of 15 kW PV back-up micro power plants in clinics in Akkar , UNDP, 2016
- Supply & Installation of First phase of the Beirut River Solar Snake (BRSS) Project of 1 MW. (Ministry of Energy) 2014-2015



- Supply & Installation of 150 kW Solar System at Jallad premises/Zouk,  
Client: Izzat Jallad & Sons, under NEEREA



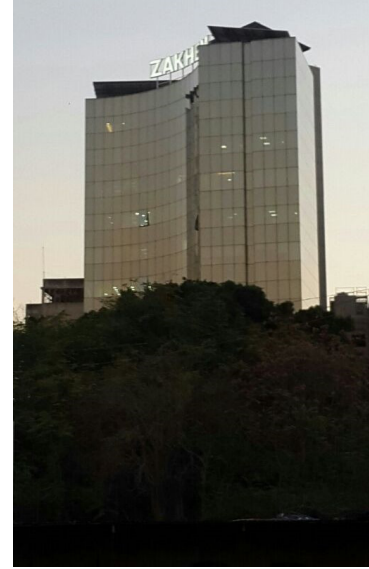


- Supply & Installation of 20 kW Solar pumping system in Niha, Chouf.  
Client: Mr. Hadi Wahib Ghaith, 2015, Contract no.PI\_1406231236 under NEEREA.



- Supply & Installation of 50 kW Solar System , 12000 Liter Solar Water Heater Systems at Institute Technique AL Kafaat/ Ainsaadeh, 2015
- Supply of 324 kW Solar Panels and Inverters to UNLB, Brindisi – Italy. 2015.
- Supply of 210 kW Solar Panels to UNSB-V, Valencia – Spain, 2015.

- Supply & Installation of 36 kW at Zakhem Plaza Beirut, 2014. Energy Yield: 58MWh/year



- Poultry House Design Supply & Installation of air heating geothermal system , PV solar system, & Anaerobic digester, American University of Beirut; AREC Farm, 2014.  
Energy Yield: 150 kWh/year



- Supply & Installation of 0.5 kWp at USEK- University Saint-Esprit De Kaslik, 2014.  
Energy Yield: 750 kWh/year





- Supply & Installation of Land line cart & remote terminal units for UNIFIL, 2014.
- Supply of 1080 Pcs. Solar Panels 300 Wp, to UNGSC Spain.2014.

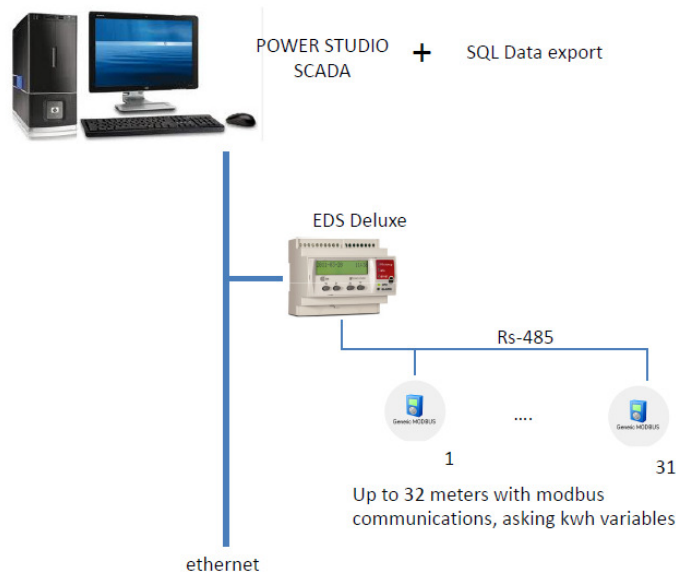


Energy Yield: 420  
MWh/year

- Supply of Solar Equipments including SMA inverters, Tracking Units & PV module Optimizer, Roof /ground Mounts, 2014, UNIFIL Energy Yield: 144 MWh/year



Energy Monitoring & Logging for 30 feeders & production Lines at Societe Moderne Libanaise Pour Le Commerce (SMLC-Pepsi Cola), 2013.



- Design, Supply, Installation and commissioning of Drinking Water Pico Hydro Power Plant at Ramlieh Municipality, 2013 (USD 59180)  
Energy Yield: 64 MWh/year



ACE Head Quarter 30 kW PV system; Design and Supervision, Energy Yield: 30 MWh/year



- Supply and installation of a hybrid PV and wind back-up micro power plants and energy efficiency sets –in Rihannieh Public School, Chebaa Secondary Public school, Deir El Ahmar Public School & Aarsal Telecom Outpost. (UNDP/CEDRO), 2013. Energy Yield: 50 MWh/year





- Supply of Wind Turbine with Control System Box Inverter SMA to UN MINURSO Headquarters/ Western Sahara / Morroco, 2013, Energy Yield: 20 MWh/year



- Supply of BAE Batteries / size: 50 kWp (264 x6OPZV 600) , VO TYPE (Complete including Intercell connectors, racks and relative accessories) , Ogero, 2013, Energy Yield: 72 kWh/year



- Supply of 2 Wind Turbines 3.5m complete with accessories, UNIFIL, 2013.  
Energy Yield: 5.5 MWh/year

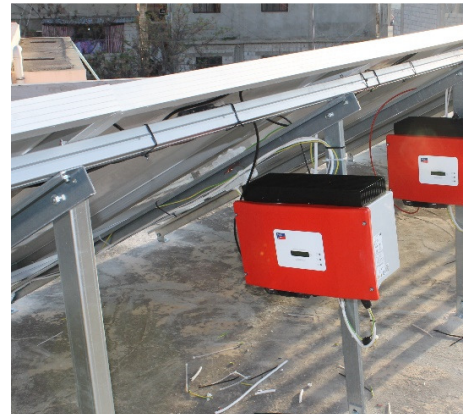




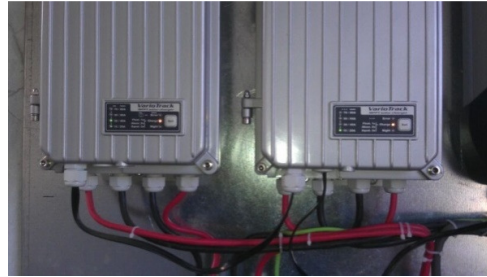
- Supply & Installation of Photovoltaic back-up micro power plants and energy efficiency sets, in Nine Sites: (Dekweneh Technical School, Hamet Municipality, Kafarhay Municipality, Lebanese University – Tripoli Campus, Yahchouch Municipality, Lebanese University – Roumieh Campus, Sultaniyyeh Municipality, Yanta Public School & Zahle Public School), UNDP/Cedro, 2012-2013  
Size 30 kWp, Energy Yield: 45MWh/year



- Supply & Installation of 3000W PV System in Ain El Helweh Clinic Center/ UNRWA.  
Yearly Energy Yield: 4.8 MWh/year



- Solar power system for elementary School in AKROUM/AKAR, 10KWp (American University of Beirut) 2012.  
Yearly Energy Yield: 15 MWh/year



- Supply & Installation for 4KW Off-grid photovoltaic Solar System & 600liter Solar Hot water Thermosyphon system Closed type for Aley City Prison. 2012.  
Yearly Energy Yield: 15 MWh/year





- Turnkey Supply, Delivery, Installation and Commissioning of High Voltage Energy Transport System .comprising of 2x1.6MVA at 11Kvto transport solar power from the installed solar plant to diesel plant at about 1 km distance, UNIFIL HQ Naqoura, UNIFIL. 2012.  
Energy Yield: 640 MWh/year



- Installation of 60KW On-grid photovoltaic Solar System in favor of IRI (Industrial Research Institute), 2012.  
Energy Yield: 85 MWh/year



- 120KVA Back UP and control System, AEG Power System- Owner Sheikh Wahib Ghaith 2012.

Energy Yield: 250 MWh/year



- Supply & Installation for 5KVA Photovoltaic back-up System at Barabara, Owner: Mr. Omar Jallad, 2012 (USD 7,131.00), Energy Yield: 7.5 MWh/year





• Supply and installation for photovoltaic back-up systems and energy efficiency measures, for the below Nineteen sites in Akkar&Bekaa areas, 60 kWp, Client: UNDP/Cedro. Consultant: TTA/Spain Project, 2009-2010. Energy Yield: 90MWh

### **Akkar Lebanon:**

1. Rajem Issa public school
2. Mashtahamoud school
3. KherbetDaoud, El Tleilepubic School.
4. El Tleile pubic school
5. Hekr El Dahiripublic school
6. Ouyoun El-Samak public school
7. Kroum Arab public school
8. AinYaakoub mixed public school
9. Habshit public school
- 10.Meniara public school for girls
- 11.El-Hakoor mixed public school



### **Bekaa-Lebanon:**

1. Baalbak first elementary
2. Chmestar community center
3. Hosh el Harime intermediate school
4. Jeb Jennine Municipality and Library
5. Mdoukha public school
6. Hosh El-Oumara community center
7. Aana Intermediate pubic school
8. Tell Zounoub Intermediate



- Supply & Install Led Street Lighting fixtures in Eight villages/Cities located in Mount Lebanon, South, and Bekaa regions, Lebanon, UNDP-Cedro. 2011 (USD 40,000.00).



- Supply & Install Earthing for Led Street Lighting fixtures in Eight villages/Cities located in Mount Lebanon, South, and Bekaa regions, Lebanon, UNDP-Cedro 2011/2012.
- Supply & Installation of Siren System in Naquora-Lebanon, E-Class 3 Horn 400W PA Speaker System with Amplifier & Controls: 2006.

- 60KWp Sanyo Bifacial photovoltaic Solar system with On-grid inverters from Fronius and one axe trackers from Lorentz: UNIFILNaqura 2007/2009.



Energy Yield: 108 MWh/year

- Supply of Power Net Metering systems for renewable PV system (Itron): UNIFIL 2008
- Supply of High Voltage Cables for UNIFIL 2010.
- Supply of Itron Field Controller, with Itron HH-Pro application software: UNIFIL.
- 57 kWp Solar Suntech PV monocrystalline Solar Cells, ASACO Aluminum ground Mounting Structure, SMA inverter: UNIFIL, 2010  
Energy Yield: 94 MWh/year





- Supply of  
Lorentz Etatrack  
UNIFIL, 2010



- Supply for Solar  
Panels & Ground  
mounts for Sanyo  
HIP190 & HIP186  
structured by Asaco,  
UNIFIL, 2010.



- Supply of custom design 100 Solar Water Heater Systems, UNIFIL, 2011.



- Supply of Solar Power Equipment 60KW, UNIFIL, 2011.  
 Energy Yield: 100MWh

- Supply of Mounts for Suntech Solar Panels STP190, 2011.193, 196KWp.  
 Energy Yield : 325MWh



- Supply of Xantrex XW- Communication gateway, UNIFIL.
- Supply of Fronius Inverters, UNIFIL

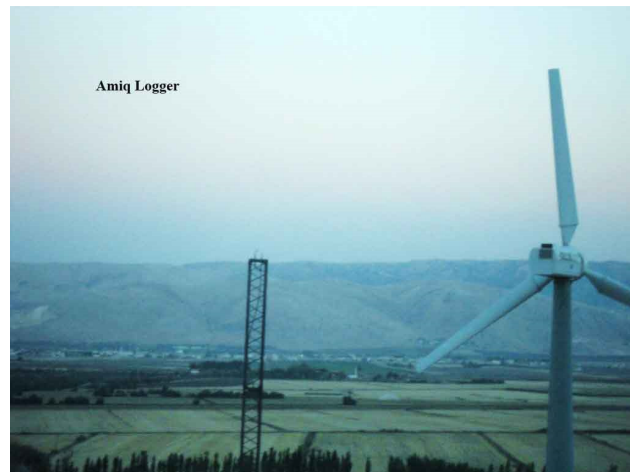
- Supply of Aluminum Sliding Racks, UNIFIL.



- Supply of Solar Water Heater Systems 300L pressurized Type, UNIFIL, 2012
- Supply of Lorentz Etatrack, UNIFIL, 2012
- Supply of Asaco Aluminum Sliding Racks, UNIFIL, 2012
- Supply of SMA Inverters, UNIFIL, 2012.
- Supply of Sliding in Mounting Racks, UNIFIL, 2013
- Supply of 700 Pcs. Solar Modules to UNLB/Italy, 2011
- Supply of 30KW Hybrid Solar Wind system with GTZ (German Development Cooperation) in Keserwan –Lebanon, 2010.

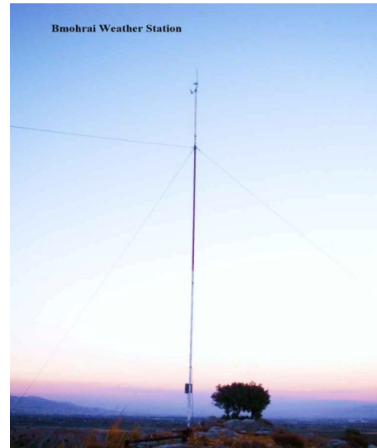


- Kaaelreem Hydroelectric Study(2003): Feasibility Study to supply
- BGF Stand Alone Wind Turbine (2002):  
350KVAp Stand-Alone wind turbine in Amiq-Bekaa to supply BGF game farm with power mainly used for irrigation. Asaco was the local partner and contributed in the installation and adaptive design with Imtech-Vonk of the Netherlands as well as maintenance to date.  
Owner Sheikh Wahib Ghaith,  
Energy Yield: 350 MWh/year



and install grid connected hydroelectric system to Mineral water RIM company to supply there 0.5MW power plant

- Bmohrai Study (2003/2006): Study to supply & Install Wind Turbine

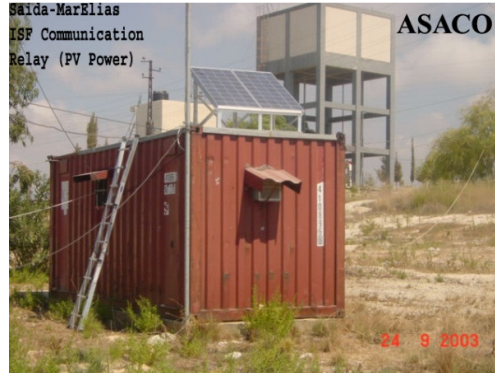


- Fakra residential PV/Wind system(2003):  
3000Wp Stand-Alone  
PV/Wind hybrid system to supply a winter resort in Fakra-Lebanon. ASACO supplied and installed the complete systems.  
Owner Chekerdjian  
Energy Yield:4500 kWh



- AUB wind Turbine (2000): Supply and install 1000Wp wind turbine for research purposes. Energy Yield: 1500 kWh
- Internal Security Forces (ISF) Communication PV stand-alone Relay(2003):

Design, supply and  
installation of PV system in  
Favor of Internal security  
forces to supply the  
communication relays. Size  
1 kWp.  
Energy Yield: 1500 kWh



- Niha-Besri Hydroelectric Power project (2007): Feasibility study to install and supply a hydroelectric units on some existing water stream in Niha-Shouf.
- Debeen PV Street-light system study (2007): Consultation to Debeen municipality to install PV solar street lighting.

, 330.00)